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EXAMINER
WILSON, ROBERT W

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/528,261	HASS, BARRY L.
	Examiner	Art Unit
	Robert W Wilson	2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 March 2000</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-57</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)

3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> .   6)☐ Other: .

DETAILED ACTION

1.0 The application of Barry L. Hass for the application entitled "SYSTEM, DEVICE AND METHOD FOR SUPPORTING A LABEL SWITCHED PATH ACROSS A NON-MPLS COMPLIANT SEGEMENT" filed 3/17/2000 without foreign was examined. Claims 1-57 are pending. **The IDS documents AF, AG, and AH were missing from the file. The examiner requests that they be submitted or resubmitted so they can be considered.**

Drawings

2.0 The drawings in this application are objected to by the Draftsperson as informal. Any drawing corrections requested, but not made in the prior application should be repeated in this application if such changes are still desired. If the drawings were changed and approved during the prosecution of the prior application, a petition may be filed under 37 CFR 1.182 requesting the transfer of such drawings, provided the parent application has been abandoned. However, a copy of the drawings as originally filed must be included in the 37 CFR 1.60 application papers to indicate the original content.

Claim Rejections - 35 USC § 103

3.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.0 Claims 1-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casey (U.S. Patent: 6,493,349 B1).

Referring to **Claim 1**, Casey teaches: A method for establishing a label switched path for

forwarding a packet with a label stack in the a communication network (Figures 2 & 3 show a

method for establishing a tunnel or forwarding a packet through a VPN AREAs in a

communication network where a VPN AREA can be MPLS or label switched), the

communication network including a first label switched domain and a second label switched

domain interconnected by a non-label switched domain (Figures 2 & 3 shows establishing a

tunnel or forwarding a packet through a VPN Area in a communication network where a VPN

area can be MPLS or label switched as well as Dedicated IP Net GRE tunnel area or non-label

switched using VPN identifiers or labels for a first and second domain)

Establishing a tunnel across the non-label switched domain which connects the first label

switched domain and the second label switched domain (Fig 2 shows establishing a tunnel across

VPN AREAS. Figure 3 shows the VPN AREAS can be MPLS or label switched and Non-

MPLS or non-label switched in any order)

Encapsulating the packet and label stack to form a tunnel packet (Fig 2 shows

encapsulating a packet and label stack to form a tunnel packet across a VPN AREA or col 6 line

21-col 7 line 36)

forwarding the tunnel packet through the tunnel (Fig 2 shows forwarding a tunnel packet

through the tunnel between VPN AREAs)

In Addition:

Wherein establishing a tunnel includes mapping a top label of the label stack to the tunnel

("Mapping a top label of the label stack" has a broad meaning. The examiner interprets

"Mapping a top label of the label stack" as VPNID per col 6 line 20-col 7 line 11.) as claimed

in **Claim 2.**

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 3.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the

specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4

lines 8-10 which is taught by the reference on col 6 lines 26-29) as claimed in **Claim 4.**

Wherein encapsulating the packet and label stack information includes providing a label

switching protocol identifier such that the second label switched domain may identify the packet

(Fig 2 shows the VBR for encapsulating the packet and assigning a VPNID or label stack

indicator through a VPN AREA.) as claimed in **Claim 5.**

Wherein the first label switched domain is a Multiprotocol Label switched domain (Fig 2

teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any

order) as claimed in **Claim 6.**

Wherein the second label switched domain is a Multiprotocol Label Switching (MPLS)

domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-

MPLS in any order) as claimed in **Claim 7.**

Wherein the first label switched domain is a MPLS domain and the second label switched

domain is a MPLS domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be

MPLS or non-MPLS in any order) as claimed in **Claim 8**

Wherein encapsulating the packet and label stack information includes providing an MPLS

identifier in the tunnel packet such that the second label switched domain may identify the

packet and the label stack (A VPNID per col 6 line 21-col 7 line 21 is provided to identify that

the encapsulated packet is tunnel across a VPN AREA which can be a MPLS or Non-MPLS

AREA per Fig 3) as claimed in **Claim 9.**

Casey does not expressly call for: sending a packet through a first label switched domain

to a non-label switched domain to a label switched domain but teaches forwarding packets

through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label

switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the

VPN Areas of Casey can be sending a packet through a first label switched domain to a non-

label switched domain to a label switched domain.

Referring to **Claim 10,** Casey teaches: A device for establishing a label switched path for

forwarding a packet with a label stack in a communication network (VBR per Fig 2 or device for

forwarding a packet with a label stack in a communication network across VPN AREAs), The

communication network including a first label switched domain and a second label switched

domain interconnected by a non-label switched domain (Figures 2 & 3 shows establishing a

tunnel or forwarding a packet through a VPN AREA in a communication network where a VPN

area can be MPLS or label switched as well as Dedicated IP Net GRE tunnel area or non-label

switched using VPN identifiers or labels for a first and second domain.

Label switching forwarding logic for identifying the next hop for the packet (The VBR of

Fig 2 contains forwarding logic for identifying the next hop for the packet)

Encapsulating logic for encapsulating the packet and label stack information to form a

tunnel packet and for establishing a tunnel across the non-label switched domain which connects

the first label switched domain and the second label switched domain (The VBR of Fig 2

contains encapsulating logic for encapsulating the packet and for adding a VPNID per col 6 line

19-col 8 line 14)

Forwarding logic for forwarding the tunnel packet through the tunnel (The VBR of Fig 2

contains forwarding logic for forwarding the tunnel packet through the tunnel)

In Addition:

Wherein the label switching forwarding logic includes mapping logic for mapping a top

label of the label stack to the tunnel ("Mapping logic for a top label of the label stack" has a

broad meaning. The examiner interprets "Mapping logic for a top label of the label stack" as

VPNID per col 6 line 20-col 7 line 11. It is within the level of one skilled in the art to implement

the functions of Casey in hardware or logic as shown in Figures 2 & 3 for establishing a tunnel

or forwarding a packet through a VPN Area in a communication network where a VPN area can

be MPLS or label switched) as claimed in **Claim 11.**

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 12.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the

specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4

lines 8-10 which is taught by the reference on col 6 lines 26-29. It is within the level of one

skilled in the art to implement the functions of Casey in hardware or logic which are shown in

Figures 2 & 3 for establishing a tunnel or forwarding a packet through a VPN Area in a

communication network where a VPN area can be MPLS or label switched using GRE) as

claimed in **Claim 13**

Wherein the tunnel packet includes a label switching protocol identifier such that the

second label switched domain can identify the packet and label stack (Fig 2 shows the VBR for

encapsulating the packet and assigning a VPNID or label stack indicator through a VPN AREA.

It is within the level of one skilled in the art to implement the functions of Casey in hardware or

logic which are shown in Figures 2 & 3 for establishing a tunnel or forwarding a packet through

a VPN Area in a communication network where a VPN area can be MPLS or label switched with

a VPNID) as claimed in **Claim 14.**

Wherein the first label switched domain is a Multiprotocol Label switched domain (Fig 2

teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any

order) as claimed in **Claim 15**

Wherein the second label switched domain is a Multiprotocol Label Switching (MPLS)

domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-

MPLS in any order) as claimed in **Claim 16**

Wherein the first label switched domain is a MPLS domain and the second label switched

domain is a MPLS domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be

MPLS or non-MPLS in any order) as claimed in **Claim 17**

Wherein the tunnel packet includes an MPLS identifier such that the second label switched

domain may identify the packet and the label stack (A VPNID per col 6 line 21-col 7 line 21 is

provided to identify that the encapsulated packet is tunnel across a VPN AREA which can be a

MPLS or Non-MPLS AREA per Fig 3) as claimed in **Claim 18.**

Casey does not expressly call for: sending a packet through a first label switched domain

to a non-label switched domain to a label switched domain but teaches forwarding packets

through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label

switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the

VPN Areas of Casey can be sending a packet through a first label switched domain to a non-

label switched domain to a label switched domain.

Referring to **Claim 19**, Casey teaches: A computer program product for use on a

computer system for establishing a label switched path for forwarding a packet with a label stack

in a communication network (It is within the level of one skilled in the art to implement the

functions of Casey in hardware or logic and software or computer program product as shown in

Figures 2 & 3 for establishing a tunnel or forwarding a packet through a VPN Area in a

communication network where a VPN area can be MPLS or label switched)

The communication network including a first label switched domain and a second label

switched domain interconnected by a non-label switched domain (Figures 2 & 3 shows

establishing a tunnel or forwarding a packet through a VPN AREAs in a communication network

where a VPN AREA which can be MPLS or label switched as well as Dedicated IP Network or

GRE tunnel area or non-label switched using VPN identifiers or labels for a first and second

domain), The computer program product comprising a computer usable medium having

computer readable program code thereon (It would be obvious to store the computer readable

program code of Casey on a computer readable medium)

Program code for establishing an IP tunnel across the non-label switched domain which

connects the first label switched domain and the second label switched domain (It is within the

level of one skilled in the art to implement the functions of Casey in software or program code.

Fig 2 shows establishing an IP tunnel across VPN AREAs)

Program code for forwarding the tunnel packet through the tunnel (It is within the level of

one skilled in the art to implement the functions of Casey in software or program code. Fig 2

shows forwarding a tunnel packet through the tunnel between VPN Areas)

In Addition:

Further including program code for mapping a top label of the label stack to the tunnel

("Mapping a top label of the label stack" has a broad meaning. The examiner interprets

"Mapping a top label of the label stack" as VPNID per col 6 line 20-col 7 line 11. It is within the

level of one skilled in the art to implement the functions of Casey in hardware or logic and

software or computer program product as shown in Figures 2 & 3 for establishing a tunnel or

forwarding a packet through a VPN AREA in a communication network where a VPN area can

be MPLS or label switched) as claimed in **Claim 20.**

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 21.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the

specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4

lines 8-10 which is taught by the reference on col 6 lines 26-29. It is within the level of one

skilled in the art to implement the functions of Casey in hardware or logic and software or

computer program product as shown in Figures 2 & 3 for establishing a tunnel or forwarding a

packet through a VPN Area in a communication network where a VPN area can be MPLS or

label switched) as claimed in **Claim 22.**

Further including program code for providing a label switching protocol identifier in the

tunnel packet such that the second label switched domain may identify the packet and label stack

(Fig 2 shows the VBR for encapsulating the packet and assigning a VPNID or label stack

indicator through a VPN AREA. It is within the level of one skilled in the art to implement the

functions of Casey in hardware or logic and software or computer program product as shown in

Figures 2 & 3 for establishing a tunnel or forwarding a packet through a VPN Area in a

communication network where a VPN area can be MPLS or label switched) as claimed in **Claim**

23.

Wherein the first label switched domain is a Multiprotocol Label switched domain (Fig 2

teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any

order) as claimed in **Claim 24.**

Wherein the second label switched domain is a Multiprotocol Label Switching (MPLS)

domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-

MPLS in any order) as claimed in **Claim 25.**

Wherein the first label switched domain is a MPLS domain and the second label switched

domain is a MPLS domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be

MPLS or non-MPLS in any order) as claimed in **Claim 26**

Wherein encapsulating the packet and label stack information includes providing an MPLS

identifier in the tunnel packet such that the second label switched domain may identify the

packet and the label stack (A VPNID per col 6 line 21-col 7 line 21 is provided to identify that

the encapsulated packet is tunnel across a VPN AREA which can be a MPLS or Non-MPLS

AREA per Fig 3) as claimed in **Claim 27.**

Casey does not expressly call for: sending a packet through a first label switched domain to a non-label switched domain to a label switched domain but teaches forwarding packets through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the VPN Areas of Casey can be sending a packet through a first label switched domain to a non-label switched domain to a label switched domain.

Referring to **Claim 28**, Casey teaches: A method for establishing a label switched path for forwarding a packet with a label stack in a communication network (Figures 2 & 3 shows a method for establishing a tunnel or forwarding a packet through VPN AREAs in a communication network where a VPN AREA can be MPLS or label switched) the communication network including a first label switched domain and a second label switched domain interconnected by a non-label switched domain (Figures 2 & 3 shows establishing a tunnel or forwarding a packet through a VPN AREA in a communication network where a VPN area can be MPLS or label switched as well as Dedicated IP Network or GRE tunnel area or non-label switched using VPN identifiers or labels for a first and second domain)

establishing a tunnel across the non-label switched domain which connects the first label switched domain and the second label switched domain (Fig 2 shows establishing a tunnel between two areas or two domains)

receiving a tunnel packet from the tunnel, the tunnel packet comprises of a encapsulated packet and label stack (Fig 2 shows receiving an encapsulated packet with a label stack across VPN Areas)

decapsulating the encapsulated packet and label stack (Fig 2 shows decapsulating an encapsulated packet with a label stack across VPN Areas)

forwarding the decapsulated packet and label stack across the second label switched domain (Fig 2 shows forwarding the decapsulated packet and label stack across a second VPN Area)

In Addition:

Wherein the first label switched domain is a MPLS domain and the second label switched domain is a MPLS domain (Fig 2 shows tunneling through VPN AREA or domains and Figure 3 shows that the VPN AREAs can be MPLS or Non-MPLS in any order) as claimed in **Claim 29**

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 30.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4 lines 8-10 which is taught by the reference on col 6 lines 26-29) as claimed in **Claim 31.**

Wherein the tunnel packet includes a label switching protocol identifier such that the second label switched domain may identify the packet and label stack (Fig 2 shows the VBR for encapsulating the packet and assigning a VPNID or label stack indicator through a VPN AREA which is utilized to identify the packet and label stack.) as claimed in **Claim 32.**

Wherein the tunnel packet includes a MPLS identifier such that the second label switched domain may identify the packet and label stack (Fig 2 shows the VBR for encapsulating the packet and assigning a VPNID or label stack indicator through a VPN AREA which is utilized to identify the packet and label stack.) as claimed in **Claim 33.**

Casey does not expressly call for: sending a packet through a first label switched domain to a non-label switched domain to a label switched domain but teaches forwarding packets through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the VPN Areas of Casey can be sending a packet through a first label switched domain to a non-label switched domain to a label switched domain.

Referring to **Claim 34,** Casey teaches: A device (VBR per Fig 2) for forwarding a packet with a label stack in a communications network (Figures 2 & 3 shows a method for establishing a tunnel or forwarding a packet through VPN AREAs in a communication network where a VPN AREA can be MPLS or label switched)

the communication network including a first label switched domain and a second label switched domain interconnected by a non-label switched domain and a second label switched domain interconnected by a non-label switched domain (Figures 2 & 3 shows establishing a tunnel or forwarding a packet through a VPN Area in a communication network where a VPN area can be MPLS or label switched as well as Dedicated IP Net GRE tunnel area or non-label switched using VPN identifiers or labels for a first and second domain)

receiving logic for receiving a tunnel packet from a tunnel across the non-label switched domain which connects the first label switched domain and the second label switched domain, (It is within the level of one skilled in the art to create receiving logic to perform the functions shown in Figures 2 & 3 in the VBR of Fig 2)

decapsulating logic for decapsulating the packet and label stack information to form a tunnel packet and for establishing a tunnel across the non-label switched domain which connects the first label switched domain and the second label switched domain (It is within the level of one skilled in the art to develop logic performing the functions defined in col 6 line 26-29 in the VBR or Fig 2 for sending an decapsulated packet across a VPN Areas)

forwarding logic for forwarding the tunnel packet through the tunnel (It is within the level of one skilled in the art to develop logic for forwarding an encapsulated packet across a VPN Area via a tunnel per Fig 2)

In Addition:

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 35.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4 lines 8-10 which is taught by the reference on col 6 lines 26-29) as claimed in **Claim 36.**

Wherein the first label switched domain is a Multiprotocol Label switched domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any order) as claimed in **Claim 37.**

Wherein the first label switched domain is an MPLS domain and the second label switched domain is an MPLS domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any order) as claimed in **Claim 38**

Wherein the tunnel packet includes a MPLS identifier such that the second label switched domain may identify the packet and label stack (The tunnel packet contains a VPNID which can be utilized to identify the VPN AREA per col 6 line 21-col 7 line 12) as claimed in **Claim 39**

Casey does not expressly call for: sending a packet through a first label switched domain to a non-label switched domain to a label switched domain but teaches forwarding packets through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the VPN Areas of Casey can be sending a packet through a first label switched domain to a non-label switched domain to a label switched domain.

Referring to **Claim 40,** Casey teaches: A computer program product for use on a computer system for establishing a label switched path for forwarding a packet with a label stack in a communication network (It is within the level of one skilled in the art to implement the functions of Casey is hardware or logic and software or computer program product to perform the functions per Figures 2 & 3 which shows establishing a tunnel or forwarding a packet through VPN AREAs in a communication network where a VPN area can be MPLS or label switched), the communication network including a first label switched domain and a second switched domain and a second label switched domain interconnected by non-label switched domain, (Figures 2 & 3 shows establishing a tunnel or forwarding a packet through a VPN AREA in a communication network where a VPN area can be MPLS or label switched as well as Dedicated IP Net GRE tunnel area or non-label switched using VPN identifiers or labels for a first and second domain)

The device comprising: the computer program product comprising a computer useable medium having computer readable program code (It is within the level of one skilled in the art to implement the functions of Casey is hardware or logic and software or computer program

product to perform the functions per Figures 2 & 3 which shows establishing a tunnel or

forwarding a packet through a VPN Area in a communication network where a VPN area can be

MPLS or label switched) thereon, the computer readable program code including:

Program code for establishing an IP tunnel across the non-label switched domain which

connects the first label switched domain and the second label switched domain (It is within the

level of one skilled in the art to implement the functions of Casey in software or program code.

Fig 2 shows establishing an IP tunnel across VPN Areas)

Program code for receiving a tunnel packet from the tunnel, the tunnel packet comprised

of an encapsulated packet and label stack (It is within the level of one skilled in the art to

implement the functions of Casey in software or program code. Fig 2 shows receiving an

encapsulated tunnel packet with a label stack between VPN Areas)

Program code for decapsulating the encapsulated packet and label stack \It is within the

level of one skilled in the art to implement the functions of Casey in software or program code.

Fig 2 shows receiving an encapsulated tunnel packet with a label stack and decapsulating the

packet and label stack between VPN Areas)

Program code for forwarding the decapsulated packet and label stack across the second

label switched domain (It is within the level of one skilled in the art to implement the functions

of Casey in software or program code. Fig 2 shows forwarding the decapsulated packet and

label stack across a second VPN area or second label switched domain)

In Addition:

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 41.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4 lines 8-10 which is taught by the reference on col 6 lines 26-29) as claimed in **Claim 41.**

Wherein the first label switched domain is a Multiprotocol Label switched domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any order) as claimed in **Claim 43.**

Wherein the second label switched domain is a Multiprotocol Label Switching (MPLS) domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any order) as claimed in **Claim 44.**

Wherein the tunnel packet includes a MPLS identifier such that the second label switched domain may identify the packet and label stack (The tunnel packet contains a VPNID which can be utilized to identify the VPN AREA per col 6 line 21-col 7 line 12) as claimed in **Claim 45.**

Casey does not expressly call for: sending a packet through a first label switched domain to a non-label switched domain to a label switched domain but teaches forwarding packets through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the VPN Areas of Casey can be sending a packet through a first label switched domain to a non-label switched domain to a label switched domain.

Referring to Claim 46, Casey teaches: In a communication system having a first label switched domain interconnected with a second label switched domain by a non-label switched domain (Fig 2 shows a communication system in which a VPN AREAs are interconnected), a

method for forwarding a label switched packet from the first label switched domain to the second

label switched domain (Fig 2 shows a method for forwarding a packet from a first VPN Area or

domain to a second VPN Area or domain), the method comprising:

Establishing a tunnel from an egress device to a first label switched domain (VBR in VPN

AREA 1) to an ingress device of the second label switched domain over the non-label switched

domain (VBR between VPN AREA 1 and 2);

Establishing a tunnel from an egress device to the first label switched domain to an ingress

device of the second label switched domain over the non-label switched domain (Fig 2)

Encapsulating the label switched packet by the egress device of the first label switched domain

(Fig 2 or col 6 line 21-col 7 line 36)

Decapsulating the encapsulated label switched packet by the ingress device of the second label

switched domain (Fig 2 or col 6 line 21-col 7 line 36)

Forwarding the decapsulated label switched packet by the ingress device of the second label

switched domain based upon label switching information in the packet (Fig 2 or col 6 line 21-col

7 line 36 which is forwarded based upon VPNID)

In Addition:

Wherein the first label switched domain is a MPLS domain (Fig 2 teaches VPN AREAs

and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any order) and the second label

switched domain is a MPLS domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the

AREAs can be MPLS or non-MPLS in any order) as claimed in **Claim 47**

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 48.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the

specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4

lines 8-10 which is taught by the reference on col 6 lines 26-29) as claimed in **Claim 49.**

Casey does not expressly call for: sending a packet through a first label switched domain

to a non-label switched domain to a label switched domain but teaches forwarding packets

through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label

switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the

VPN Areas of Casey can be sending a packet through a first label switched domain to a non-

label switched domain to a label switched domain.

Referring to **Claim 50**, Casey teaches: A tunneling protocol for interconnecting the first

label switched domain and a second label switched domain (The term tunneling protocol has a

very broad interpretation. The examiner interprets "tunneling protocol" as the protocol

performing the functions shown in Fig 2 which performs the function of tunneling between VPN

AREAs as shown in Fig 2)

Encapsulating means for encapsulating the payload packet from a label switched protocol

(col 6 line 21-col 7 line 36)

Protocol type indicator for identifying the label switched protocol (VPNID are assigned

to different VPN AREAs per col 6 line 20-col 8 line 13 and consequently will identify going

from one area to another area or MPLS or Label switched to NON-MPLS or non-label switched
to MPLS or Label switched)

In Addition:

Wherein the label switched protocol is MPLS (Fig 3 shows that an AREA can be MPLS)
as claimed in **Claim 51**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the
specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4
lines 8-10 which is taught by the reference on col 6 lines 26-29) as claimed in **Claim 52.**

Casey does not expressly call for: sending a packet through a first label switched domain
to a non-label switched domain to a label switched domain but teaches forwarding packets
through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label
switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the
VPN Areas of Casey can be sending a packet through a first label switched domain to a non-
label switched domain to a label switched domain.

Referring to **Claim 53**, Casey teaches: A communication system having a first label
switched domain having an egress device, a second label switched domain having an ingress
device and a non-label switched domain which coupled the egress device of the first labe
switched domain to the ingress device of the second label switched domain wherein the label
switched path for forwarding the packet and label stack is established by

(Fig 2 shows a VBR devices in a communication system which forward packets between VPN
Areas

Establishing a tunnel from an egress device to a first label switched domain (VBR in VPN

AREA 1) to an ingress device of the second label switched domain over the non-label switched

domain (VBR between VPN AREA 1 and 2);

Encapsulating the packet and label stack by the egress device of the first label switched domain

(Fig 2 shows encapsulating the packet and VPID or label stack by the VBR or first egress device

in a VPN AREA to an another VBR in another VPN AREA)

Encapsulating the label switched packet by the egress device of the first label switched domain

(Fig 2 or col 6 line 21-col 7 line 36)

Forwarding the encapsulated label switched packet by the ingress device of the second label

switched domain based upon label switching information in the packet (Fig 2 shows a VBR or

ingress device encapsulating a packet forwarding a packet across a VPN AREA or col 6 line 21-

col 7 line 36 which is forwarded based upon VPNID)

Decapsulating the encapsulated label packet and label stack by the ingress device of the second

label switched domain (Fig 2 shows the VBR or ingress device decapsulating the packet over a

VPN AREA or per col 6 line 21-col 7 line 36)

Forwarding the decapsulated packet and label stack by the ingress device of the second label

switched domain based upon label switching information in the packet (Fig 2 shows the VBR or

ingress device decapsulating the packet and VPNID or label stack indicator through a VPN

AREA)

In Addition:

Wherein the first label switched domain is a MPLS domain (Fig 2 teaches VPN AREAs

and Fig 3 teaches that the AREAs can be MPLS or non-MPLS in any order) and the second label

switched domain is a MPLS domain (Fig 2 teaches VPN AREAs and Fig 3 teaches that the

AREAs can be MPLS or non-MPLS in any order) as claimed in **Claim 54**

Wherein the tunnel is an IP tunnel (col 6 lines 26-29) as claimed in **Claim 55.**

Wherein the tunnel is a Generic Routing Encapsulation (GRE) tunnel (According the

specification an IP tunnel is the same as a Generic Routing Encapsulation (GRE) tunnel per Pg 4

lines 8-10 which is taught by the reference on col 6 lines 26-29) as claimed in **Claim 56.**

Casey does not expressly call for: establish a tunnel from an egress device of the first label

switched domain to an ingress device of the second label switched domain over the non-label

switched domain but teaches forwarding packets through VPN Areas per Fig 2 which can be

either MPLS or Label switched and non-label switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the

VPN Areas of Casey can be either MPLS or Label switched and non-label switched areas in any

order per Figs 1 and 3.

Referring to **Claim 57**, Casey teaches: A communication system (Fig 2) comprising:

A first label switched domain for forwarding a label switched packet (VPN AREA or first

domain) , the first label switched domain having a plurality of label switching devices including

an egress device (VBR or egress device with a VPN AREA per Fig 2)

A second label switched domain for forwarding the label switched packet (VPN AREA or

second domain per Fig 2)

A non-label switched domain having a plurality of forwarding devices (VPN AREA or domain),

the non-label switched domain coupling the egress device of the first label switched domain (The

VBR is an egress device coupled to the VPN AREA per Fig 2)

The egress device establishes a tunnel from the first label switched domain to the ingress device

of the second label switched domain across the non-label switched domain (The VBR or ingress

device establishes a tunnel from the first VPN AREA to the second VPN AREA per Fig 2)

The egress device encapsulated the label switched packet (The VBR or egress device

encapsulates the packet for transmission across the VPN AREA per Fig 2)

The egress device forwards the encapsulated label switched packet over the tunnel to the ingress

device of the second label switched domain (The VBR or egress device forwards the

encapulsulated packet over the tunnel to a VBR or ingress device at the end of the VPN AREA

per Fig 2)

The ingress device receives the encapsulated label switched packet form the tunnel (The VBR

device receives the encapsulated label switched packet from the tunnel per Figure 2)

The ingress device decapsulated the encapsulated label switched packet (The VBR decapsulated the packet received over a VPN AREA per Fig 2)

And the ingress device forwards the decapsulated label switched packet based on label switchin information in the packet (VBR per Fig 2 forwards the decapsulated packet over a VPN AREA based upon VPNID or information in the packet per col 6 line 20-col 7 line 3)

Casey does not expressly call for: establish a tunnel from an egress device of the first label switched domain to an ingress device of the second label switched domain over the non-label switched domain but teaches forwarding packets through VPN Areas per Fig 2 which can be either MPLS or Label switched and non-label switched areas per Figs 1 and 3.

It would be obvious to one of ordinary skill in the art at the time of the invention that the VPN Areas of Casey can be either MPLS or Label switched and non-label switched areas in any order per Figs 1 and 3.

Claim Objections

5.0 Claims 28-49 and 53-57 are objected to under 37 CFR 1.75 of the following formalities: The word "decapsulating" is utilized when the examiner believes that the applicant means "de-encapsulating" which is used for example in claims 28, 24, 40, 46, 53, and 57. Appropriate correction is required.

Claim Rejections - 35 USC § 101

6.0 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 50-52 are rejected under 35 U.S.C. 101 because these claims refer to a "tunneling

protocol" which is not a process, machine, manufacture, or composition of matter.

Referring to Claim 50, the words "tunneling protocol" are not a process, machine,

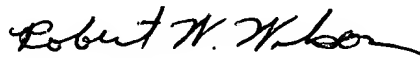manufacture, or composition of matter.

In Addition:

Claims 51 and 52 are rejected because they depend upon claim 50.

Conclusion

7.0   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Robert W Wilson whose telephone number is (703) 305-4703.

The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 872-9314 for regular

communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Robert W Wilson
Examiner
Art Unit 2661

RWW
August 13, 2003

DOUGLAS OLMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600